ABSTRACT

First and second partially filled ATM cells are removed from a cell stream and merged into a third ATM cell. The third ATM cell may then be inserted back into the cell stream. The third ATM cell may include header information indicative of the number of partially filled ATM cells from which it was created. To accommodate these operations, a

5   data communication device, such as an ATM switch, includes means for identifying partially filled ATM cells within an ATM cell stream. The device also includes means for merging at least two of the partially filled ATM cells into a merged ATM cell and means for inserting the merged ATM cell back into the ATM cell stream. The means for identifying partially filled ATM cells may comprise a lookup table stored in a computer readable

10   medium and indexable using logical connection identification information. The scheme can be used on a link-by-link basis within an ATM network or across multiple hops within such a network for combining cells traveling along a common route. The scheme is not limited to combining information on the same virtual channel or information which travels only between a common source and destination.

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